APPENDIX C

NOTATION

Chapters 3, 4, and 5

Symbol	Term
b	Distance over which base is in compression
B	Width of base of structure
$\bar{B}$	Effective width of base
c	Cohesion on slip plane of wedge
c_d	Developed cohesion on slip plane of wedge
c_1	Variable used to compute critical slip plane angle
c_2	Variable used to compute critical slip plane angle
C_E	Hydrodynamic factor
C_f	Coefficient used to compute wind loads
d_b	Depth of water at breaking wave occurrence
d_c	Depth of tension crack in cohesive backfill
d_s	Water depth
D	Depth of material in front of wall to base of structural wedge
e	Eccentricity of resultant at base of structural wedge
F	Inertia force of wall
FS	Factor of safety
F_T	Magnification factor
h	Wall height; height of fill against gravity wall or height of fill against "structural wedge"
H	Design wave height

Symbol	Term
H_b	Height of wave which breaks in water depth d_b
H_L	Horizontal force, acting to the right, applied to wedge
H_{Li}	Any horizontal force applied above the top or below the bottom of the left side adjacent wedge
H_R	Horizontal force, acting to the left, applied to wedge
H_{Ri}	Any horizontal force applied above the top or below the bottom of the right side adjacent wedge
H_s	Average of highest one-third of all waves or depth of saturation in wedge
H_1	Average of highest 1 percent of all waves
i	Number of wedge being analyzed
k_h	Horizontal acceleration in g's
k_v	Vertical acceleration in g's
K	Lateral earth pressure coefficient
K_A	Active earth pressure coefficient
K_{AE}	Mononobe-Okabe active earth pressure coefficient
K_i	Horizontal earth pressure coefficient for the i^{th} layer
K_o	At-rest earth pressure coefficient
$K_{o\beta}$	At-rest earth pressure coefficient calculated by Danish Code equation
K_P	Passive earth pressure coefficient
K_{PE}	Mononobe-Okabe passive earth pressure coefficient
L	Length along slip plane of wedge
L_i	Length along the slip plane of the i^{th} wedge
N'	Resultant of forces normal to the assumed sliding plane
N_c, N_q, N_r	Bearing capacity factors for strip load

Symbol	Term
p_E	Hydrodynamic pressure at depth y below top surface of water
p'_{hm}	Pressure due to compaction at depth z_{cr}
p'_{hz}	Effective horizontal pressure at depth z
p'_{vi}	Vertical effective earth pressure at the top of the i^{th} layer
p_{AH}	Horizontal active earth pressure at depth z
p_{PH}	Horizontal passive earth pressure at depth z
P	Lateral (horizontal) force produced by wedge
P_A	Total active force on a unit length of wall backfilled with a cohesionless material; static component for a driving wedge
P_{AE}	Static and dynamic forces due to driving wedge
P_{AH}	Horizontal component of active earth force
P_D	Absolute value of total horizontal force from driving wedges
P_E	Hydrodynamic force given by Westergaard's equation
P_{EE}	Effective horizontal earth force contributed by wedge or wedge segment
$(P_{i-1} - P_i)$	Summation of applied forces acting horizontally on i^{th} wedge
P_P	Static component for a resisting wedge
P_{PE}	Static and dynamic forces due to resisting wedge
P_{PH}	Horizontal component of passive earth force
P_R	Absolute value of total horizontal force from resisting wedges
P_W	Internal water force acting on the side of the wedge free body
P_{ws}	Static component of water force for partially saturated wedge
q'	Foundation pressure at base of structural wedge
q_o	Effective overburden pressure
Q	Vertical component of ultimate bearing capacity

Symbol	Term
SMF	Strength mobilization factor
T	Force tangential to slip plane of wedge
T	Earthquake period of vibration in seconds
T_F	Shear force that will cause failure along slip plane
U	Uplift force normal to slip plane of wedge
U_i	Uplift force exerted normal to slip plane of the i^{th} angle
V	Vertical force applied to wedge
V_i	Any vertical force applied above the top of the i^{th} wedge
ΣV	Summation of vertical forces for structural wedge
V_{max}	Maximum value of V for which the equations for c_1 and c_2 are valid
W	Total weight of material in wedge
W_i	Total weight of water, soil, rock, or concrete in the i^{th} wedge
x_R	Location of resultant force from toe of structure
Y_{AE}	Line of action of P_{AE}
Y_{PE}	Line of action of P_{PE}
z	Depth from the top of the wall
z_i	Vertical distance measured down from the top of the i^{th} layer
z_{cr}	Critical depth where pressure due to compaction equals p'_{hm}
z_w	Depth to water table
α	Angle between slip plane of wedge and horizontal
α_i	Angle between slip plane of the i^{th} wedge and the horizontal
β	Angle between top of wedge and horizontal
γ	Unit weight of material
δ	Angle of wall friction

Symbol	Term
γ'	Effective unit weight of material
γ_i	Effective unit weight of the i^{th} layer
θ	Angle of the wall face from horizontal or inclination of wall with respect to vertical
ϕ	Angle of internal friction on slip plane of wedge
ϕ'	Drained friction angle
ϕ_d	Developed angle of internal friction on slip plane of wedge
σ	Stress normal to slip plane
σ'_n	Effective normal stress
τ	Applied shear stress on slip plane of wedge
τ_f	Shear strength of wedge material
ψ	Seismic inertia angle
$\gamma_{sat'}$ γ_s	Saturated unit weight of fill
γ_w	Unit weight of water
γ_b	Buoyant unit weight of fill
tan ϕ	Unfactored shear strength parameter of the foundation material through which sliding plane passes
tan ϕ_d	Portion of shear strength considered to be mobilized or developed along the slip plane(s)
tan c	Unfactored shear strength parameter of the foundation material through which sliding plane passes
ξ	Correction factors for bearing capacity
Δp_{HX}	Increase in horizontal pressure at distance x due to surcharge
Δp_{HZ}	Increase in horizontal pressure at depth z due to surcharge
ΔP_H	Increase in horizontal force due to surcharge
ΔP_{AE}	Dynamic component of total driving force
ΔP_{PE}	Dynamic component of total resisting force